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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/483,728	01/14/2000	Yoshiaki Saita	S004-3288(DIV)	8760

7590

03/09/2004

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EXAMINER

TUGBANG, ANTHONY D

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/483,728	SAITA ET AL.	
	Examiner	Art Unit	
	A. Dexter Tugbang	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-12 is/are pending in the application.
- 4a) Of the above claim(s) 4,5 and 8-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2.3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the invention of Group II-B, Claims 6 and 7 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the restriction is erroneous to the extent that a transmittal letter, which accompanied the filing of the instant application, cancelled Claims 1-3. This is not found persuasive because while it is true that the transmittal letter cancelled Claims 1-3, the restriction is still proper with respect to the invention of Groups II-A, II-B and II-C. It is noted that the applicants' have not pointed out any supposed errors in the restriction requirement between the invention of Groups II-A, II-B and II-C in Paper No. 7. Therefore, the requirement is still deemed proper and is therefore made FINAL.

2. Claims 4, 5 and 8-12 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 6, the latter recitation of "a respective pair of heaters" (line 15) is unclear if this is referring to one of the pairs of heaters in the previous recitation of "a plurality of pairs of

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heaters” (lines 4-5). Also, the latter recitation of “a heater” (line 19) is unclear if this is referring to one of the heaters in the previous recitation of “a plurality of pairs of heaters” (lines 4-5), or whether this is some new heater. How many heaters or groups of heaters are there? Moreover, the latter recitation of “a respective pair of integrated circuits” (line 17) is unclear if this is referring to the previous recitation of “integrated circuits” (line 8). How many groups of integrated circuits are there? The same can be said for the recitation of “individual thermal heads” (line 19) and whether this recitation is referring to the previous recitation of “thermal heads” (line 1) in the preamble. There is a great deal of confusion between the latter recitations and previous recitations as mentioned above, which is misleading and renders the claims as being vague and indefinite.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 6, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Publication JP 62-183352, referred to hereinafter as JP’352, in view of either Freestone et al 3,054,709 or Tijburg et al 4,224,101.

JP’352 discloses a method for manufacturing thermal heads comprising: providing a substrate 1 (in Fig. 3) having a first surface (top surface of 1) and a second surface (bottom surface of 1) with electrodes 6 and heaters 5 disposed on the first surface and the heaters being

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disposed in a confronting, spaced-apart relation to one another; mounting integrated circuits (IC chip 7) on the electrodes to provide at least two pairs of integrated circuits (step 2 in Fig. 3) with the integrated circuits being disposed in confronting, spaced-apart relation to one another; encapsulating the integrated circuits with a resin, which forms a sealing element 9 to protect the integrated circuits; forming grooves 3 in the first surface of the substrate 1 to provide at least one group of separating lines so that the separating lines are disposed between a respective pair of heaters 5 and a respective pair of integrated circuits 7; cutting the substrate along the separating lines formed by the grooves to provide a plurality of thermal heads each having at least one of the heaters 5 and each having at least one of the integrated circuits 7 capable of providing a drive signal, or electrical current, to the heater (see CONSTITUTION).

JP'352 appears to show only one group of two grooves (in Fig. 3) in the first surface of the substrate that forms only one group of separating lines. JP'352 does not appear to teach that the grooves form more than one group, i.e. a plurality of groups, of separating lines which separates pairs of the heaters and pairs of the integrated circuits.

Both Freestone and Tijburg suggests the overall concept that it is conventional, old and notoriously well known in the art to form a plurality of groups of grooves, which forms a plurality of groups of separating lines, in a substrate (see Figs. 1 and 2 of Freestone and Figs. 1 of Tijburg) before cutting the substrate, for the purpose of producing pairs or a plurality of integrated circuits with electrical devices from one, single substrate (see Freestone col. 1, lines 15+ and Tijburg col. 1, lines 18+).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of JP'352 by forming more than one group of grooves,

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which forms more than one group of separating lines prior to cutting, as taught by Freestone and Tijburg, to positively produce a large number of pairs, or a plurality of, thermal heads each with heaters and integrated circuits, from one single substrate.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'352 in view of either Freestone et al or Tijburg et al, as applied to Claim 6 above, and further in view of Ichihara 5,814,532.

JP'352, as modified by Freestone and Tijburg, discloses the claimed manufacturing method as relied upon above. The modified JP'352 method does not teach that the grooves are formed only on the second surface of the substrate by using a laser scribing.

Ichihara suggests forming grooves 4 (in Fig. 2) on a second surface of a substrate 10 with a laser scribe (see col. 2, lines 57-61) to achieve the formation of a plurality of electrical devices having integrated circuits (electrodes 17, 18) from one, single substrate (see col. 4, lines 30-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of JP'352 by alternatively forming the grooves in the second surface of the substrate in lieu of the first surface, to positively form a plurality of thermal heads from one, single substrate.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

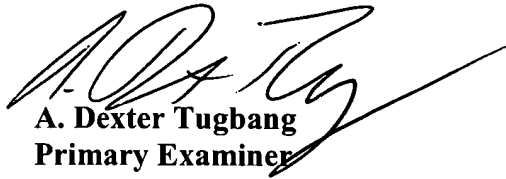
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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 703-308-7599.

The examiner can normally be reached on Monday - Friday 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


A. Dexter Tugbang
Primary Examiner
Art Unit 3729

March 4, 2004